

Wednesday, 16/07/2008 10:37:54 AM  
Julie Lecocq

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	FWD TUBE ASSEMBLY
<b>Job Number</b> :	40559		
<b>Estimate Number</b> :	10467		
<b>P.O. Number</b> :		<b>Part Number</b> :	D3391021
<b>This Issue</b> :	16/07/2008	<b>S.O. No.</b> :	
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D3391 REV G
<b>First Issue</b> :	1 /	<b>Project Number</b> :	N/A
<b>Previous Run</b> :	36192	<b>Drawing Revision</b> :	G
	<b>Type</b> :	<b>Material</b> :	
	SKIDTUBES	<b>Due Date</b> :	08/08/2008
<b>Written By</b> :		<b>Qty:</b>	1 Um: Each
<b>Checked &amp; Approved By</b> :	<u>JUL 08.7.16</u>		
<b>Comment</b> :	Est. A 05.09.13 New issue KJ/JLM Est. B 06.02.10 Dwg rev.D ecn 773 EC Est. C 06.05.02 Added inspections EC est D 07.03.13 rev F dwg EC est E 07.11.07 revG dwg ecn1053P EC verified by: DD Est Rev:f ECN 1056 07-11-12 DD verified by: EC		

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	D6013047	Skidtube Material
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
SKIDTUBE MAT'L

Pick:

Qty	Part Number	Description	Batch
1	D6013-047	Extrusion	B26547

DP 8-8-5

2.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
-----	-------------	-----------------------



**Comment:** LANDING GEAR RESOURCE 1  
Cut extrusion to 46.52 +0.010 -0.020

DP 8-8-5

3.0	BENDING	BENDING MACHINE - SKIDTUBES
-----	---------	-----------------------------



**Comment:** Nc bender  
Bend as per Dwg D3391 Using Bend Prog 3391021

DP 8-8-5

4.0	QC5.	INSPECT WORK TO CURRENT STEP
-----	------	------------------------------



**Comment:** INSPECT WORK TO CURRENT STEP

S 8/8/5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 16/07/2008 10:37:54 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 40559

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine as per Folio FA590 Rev. F & Dwg D3391 Rev. G  
Identify as D3391-1

2-Deburr

SL 08/07/06

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SL 08/08/06

7.0

MILLING CONV.

CONVENTIONAL MILLING MACHINE



Comment: CONVENTIONAL MILLING MACHINE

Drill X1 Aft cap as per Dwg D3391 .1875" dia

mmf 08/07/11

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

mmf 08/07/11

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

SL 08/07/11

Q

10.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)  
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5-Deburr & Scribe Batch number Inside aft end.

6-Transfer drill D3391-021 with D3391-023

AWM 8-9-22  
DP 8-11-5

11  
7-9-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 40559

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description:

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

808/11/05 (X)

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

ARM 8-11-05

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

D 11 8-11-5

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

SPACER

batch:

6411863

(C)

11 8-11-6

15.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch:

exp. date:

9-11-1

cure time 12hrs. as per QSI015

2- grind crossbolt flush

3-back drill crossbolt if necessary

1108866

11 8-11-6

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

808/11/14 (X)

17.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref. 4.3.5.1) as per QSI 005 4.3

START TIME:

11:00 OF

OVEN TEMPERATURE:

320

M-11 08/11/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 40559

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

FINISH TIME:

11-30

M.H. 08/11/20

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



JH



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

08-11-21

(X)

19.0

ALS41032130

Insert



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

batch: M105819

or equivalent

per QSI 017

JH

20.0

ALS41032225

Insert



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

INSERT

batch: M1100621

or equivalent

per QSI 017

JH

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

JH

08-11-21

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S

08/11/21

(X)

23.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Tow Cap Assembly

Pick:

Qty

Part Number

Description

Batch

1

D3401-041

Tow Cap

1336216

JH

08-11-24

(X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 40559

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

D356413

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

13 419 33

JH

25.0

D356613

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

13 412 147

JH

26.0

D36721

Phenolic Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

PHENOLIC WASHER

13 39 275

JH

27.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Bolt

Pick:

Qty

Part Number

Description

Batch

4

AN3C4A

Bolt

1109231

JH

28.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

washer

11 109788

JH

29.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Install tow Cap as per Dwg D3391

Identify as D3391-021

JH

08-1-24

(X)

30.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect thread of each insert using DT8821

Soolulzy

(X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: FWD TUBE ASSEMBLY

Job Number: 40559

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

43169

PPP 41684

P-8/11/28 (C)

32.0

QC21

FINAL INSPECTION/W/O RELEASE



08/11/25

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



mk 08-11-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



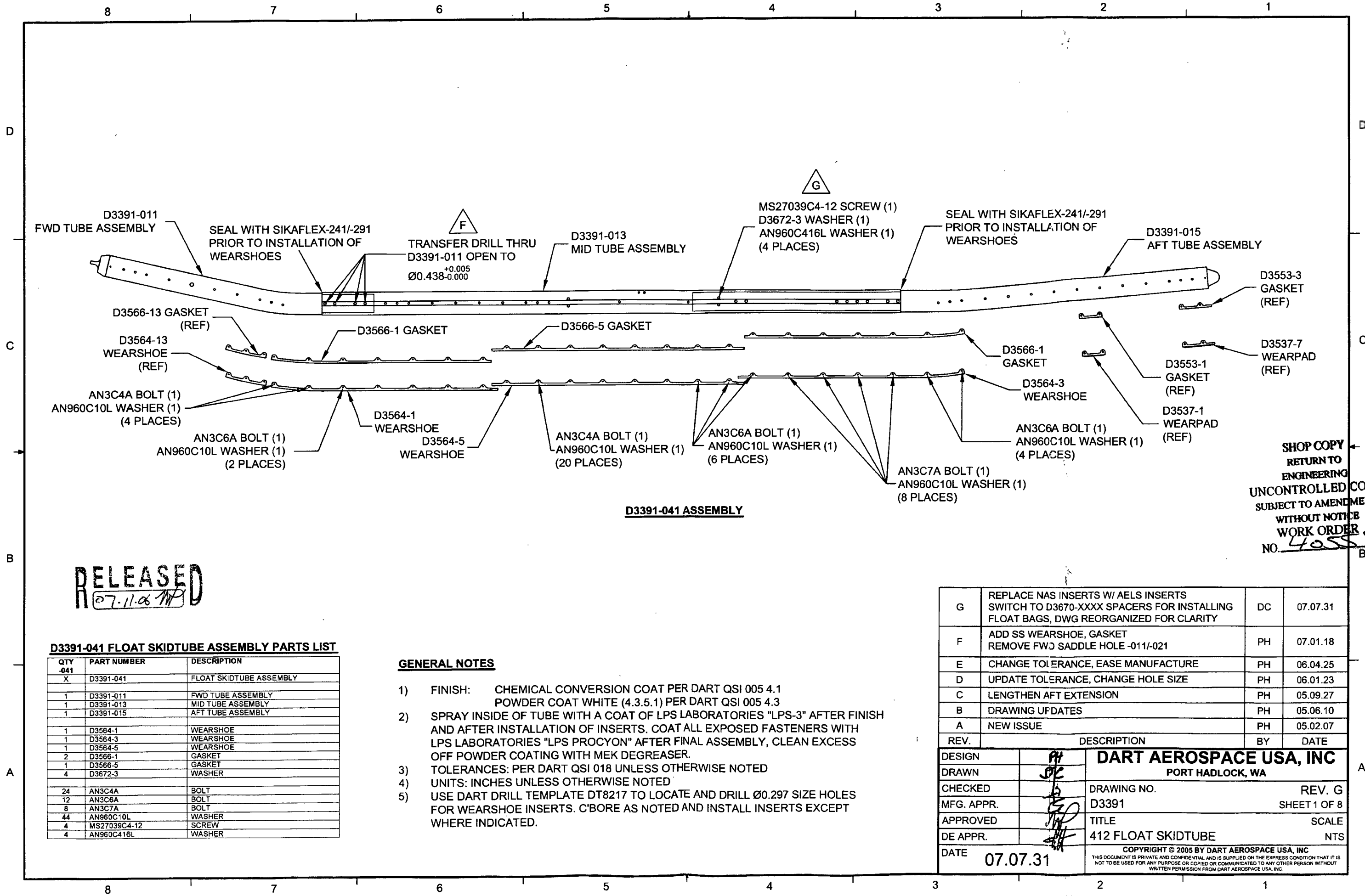
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



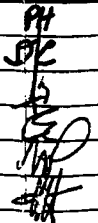
RELEASED  
27-11-08 MP

**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
041		
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

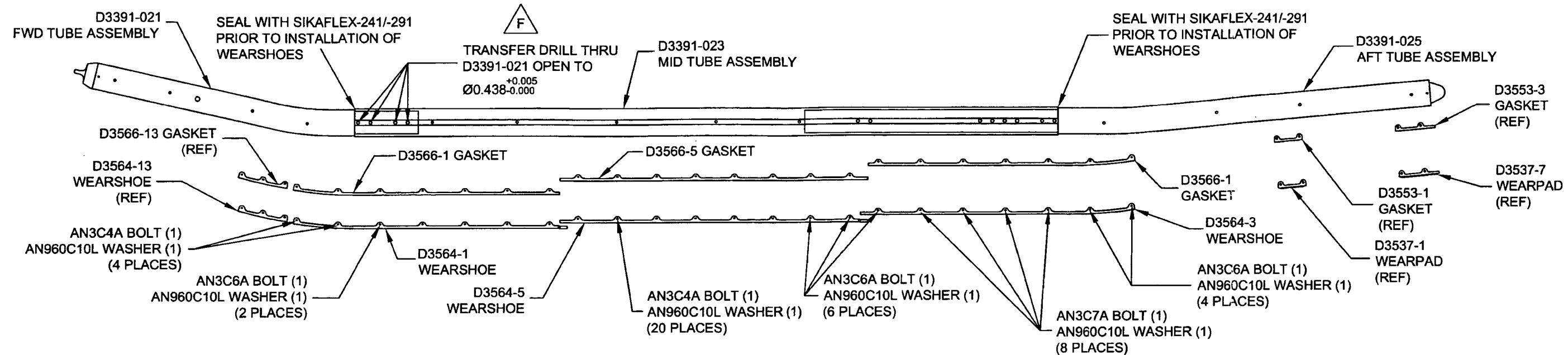
**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.  
TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.
- 5)

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN		<b>DART AEROSPACE USA, INC</b> PORT HADLOCK, WA	
DRAWN			
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	







**D3391-043 ASSEMBLY**

**RELEASED**  
07.11.21

**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

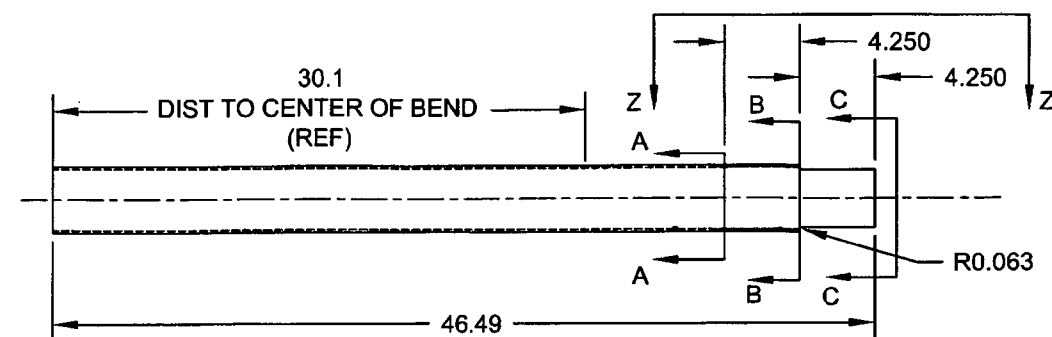
QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

**GENERAL NOTES**

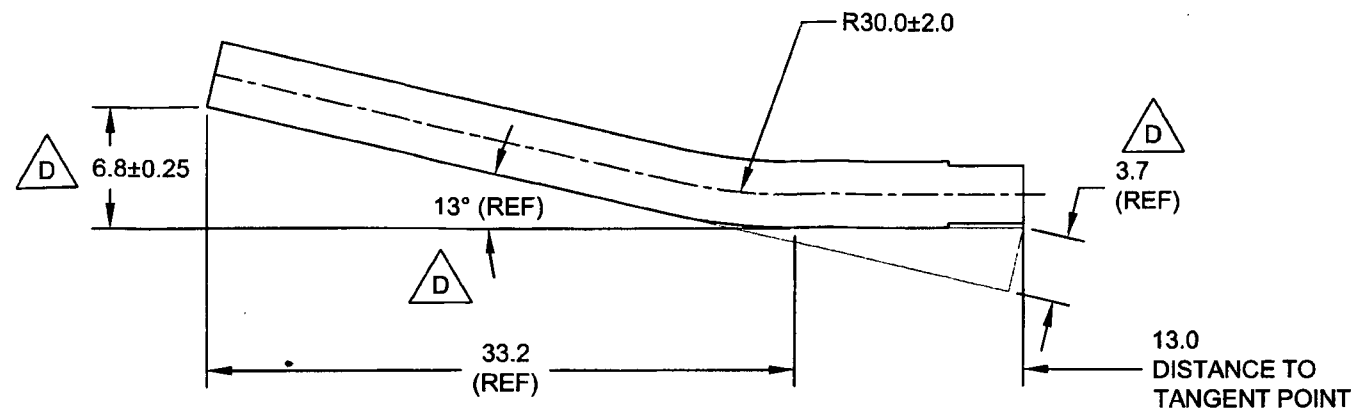
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.  
TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 40559

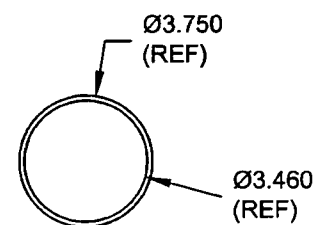
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	JTC	PORT HADLOCK, WA	
CHECKED	J	DRAWING NO.	REV. G
MFG. APPR.	FD	D3391	SHEET 2 OF 8
APPROVED	PH	TITLE	SCALE
DE APPR.	JTC	412 FLOAT SKIDTUBE	NTS
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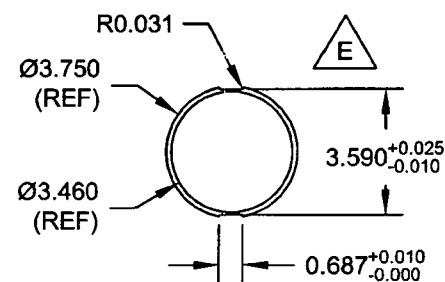
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



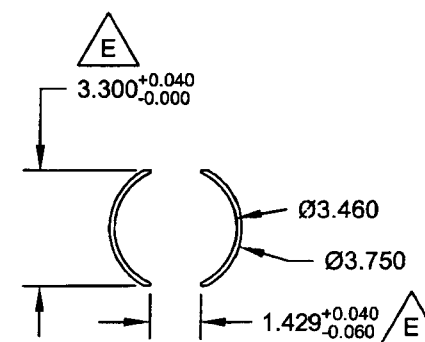
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



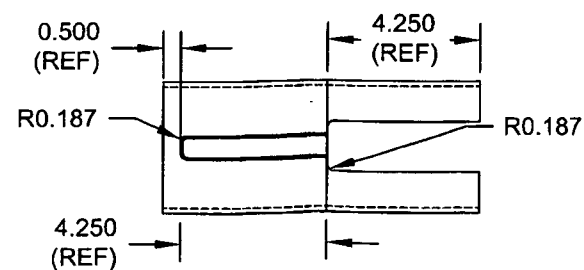
**SECTION A-A**  
(SCALE 1:5)



**SECTION B-B**  
(SCALE 1:5)



**SECTION C-C**  
(SCALE 1:5)



**VIEW Z-Z**  
(SCALE 1:5)

RELEASED  
07.11.06

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WITHOUT NOTICE  
WORK ORDER  
NO. 40559

DESIGN	GH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	JLC	PORT HADLOCK, WA	
CHECKED	J	DRAWING NO.	REV. G
MFG. APPR.	CE	D3391	SHEET 3 OF 8
APPROVED	ND	TITLE	SCALE
DE APPR.	ND	412 FLOAT SKIDTUBE	1:10
DATE	07.07.31	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



